WEST

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L13: Entry 1 of 1

File: DWPI

Jul 19, 2001

DERWENT-ACC-NO: 2001-627381

DERWENT-WEEK: 200173

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TITLE: Thermal vacuum vaporization apparatus comprises a vacuum chamber assembly with a plasma etching-vacuum chamber, a chamber for vaporizing the organic layer and a chamber for vaporizing the metallic layer

PATENT-ASSIGNEE: PRECISION INSTR DEV CENT NAT SCI CO (PRECN)

PRIORITY-DATA: 2001DE-2006283 (April 10, 2001)

PATENT-FAMILY:

PUB-NO PUB-DATE LANGUAGE PAGES MAIN-IPC
DE 20106283 U1 July 19, 2001 019 C23C014/24

APPLICATION-DATA:

PUB-NO APPL-DATE APPL-NO DESCRIPTOR

DE 20106283U1 April 10, 2001 2001DE-2006283

INT-CL (IPC): C23 C 14/24

ABSTRACTED-PUB-NO: DE 20106283U

BASIC-ABSTRACT:

NOVELTY - Thermal vacuum vaporization apparatus comprises a vacuum chamber assembly (1) formed as a connecting body of the plasma etching-vacuum chamber (1A), the chamber (1B) for vaporizing the organic layer and the chamber (1C) for vaporizing the metallic layer. The chamber (1B) and the chamber (1C) are emptied using a pump system (2) to form a vacuum.

DETAILED DESCRIPTION - Preferred Features: A sample holder (3a5) is inserted by a magnetic slide rod (3a1) into the plasma etching-vacuum chamber and further into the chamber (1B). The holder is transferred on the sample seat (3b4) of the rod.

The three chambers (1A, 1B, 1C) are integrated in one body using high vacuum valves (11, 12).

USE - Used for organic electroluminescent diodes.

ADVANTAGE - The vaporization processes are simplified.

DESCRIPTION OF DRAWING(S) - The drawing shows a side view of the thermal vacuum vaporization apparatus.

Vacuum chamber assembly 1

Plasma etching-vacuum chamber 1A

chamber for vaporizing the organic layer 1B



Chamber for vaporizing the metallic layer 1C

Pump system 2

Slide rod 3a1

Sample holder 3a5

Sample seat 3b4

ABSTRACTED-PUB-NO: DE 20106283U

EQUIVALENT-ABSTRACTS:

CHOSEN-DRAWING: Dwg.1A/4

DERWENT-CLASS: L03 M14 U11 U12 CPI-CODES: L04-E03A; M14-A04;

EPI-CODES: U11-C01A1; U11-C01J6; U11-C09A; U12-A01A1X; U12-A01A2; U12-B03C;

```
L11 219617 MOV######
=> d his
     (FILE 'HOME' ENTERED AT 13:29:45 ON 22 JUN 2003)
    FILE 'INSPEC' ENTERED AT 13:30:24 ON 22 JUN 2003
L1
         13079 ELECTROLUMINESC######
L2
          607 ORGAN### (4A) EMISS####
L3
            0 EVOPAR####
L4
         54215 EVAPORA#####
L5
         21091 MASK
L6
         13551 L1 OR L2
L7
           510 L4 AND L6
             6 L1 AND L2 AND L4
L8
             5 L7 AND L5
L9
    FILE 'CA' ENTERED AT 13:33:52 ON 22 JUN 2003
L10
            11 L9
       219617 MOV######
L11
=> 110 and 111
       0 L10 AND L11
L12
```

=>

=> mov######

```
ANSWER 1 OF 11 CA COPYRIGHT 2003 ACS
L10
AN
     138:330104 CA
ΤI
     Self-aligned hybrid deposition of organic materials through a mask
     for fabricating an org. semiconductor device
IN
     Shtein, Max; Forrest, Stephen R.
PA
     The Trustees of Princeton University, USA
SO
     PCT Int. Appl., 79 pp.
     CODEN: PIXXD2
DT
     Patent
LΑ
     English
IC
     ICM H01L021-00
     ICS H01L051-40; H01L021-20
     76-3 (Electric Phenomena)
     Section cross-reference(s): 52, 73, 75
FAN.CNT 2
     PATENT NO.
                        KIND DATE
                                                APPLICATION NO. DATE
                              -----
                                              WO 2002-US28089 20020904
                       A1 20030424
PΤ
     WO 2003034471
         W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN,
              CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH,
              GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU,
              TJ, TM
         RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL,
              PT, SE, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR,
              NE, SN, TD, TG
     US 2003087471
                               20030508
                                               US 2002-233482
                                                                   20020904
                        A1
PRAI US 2001-316264P
                         P
                               20010904
     US 2001-316968P
                         Р
                               20010905
     US 2001-332090P
                         Р
                               20011121
     US 2001-317215P
                         Ρ
                               20010904
AΒ
     A 1st layer is deposited over a substrate through a mask by a
     1st process that results in the 1st layer having a 1st area of coverage.
     A 2nd layer is then deposited over the substrate through the mask
     by a 2nd process that results in the 2nd layer having a 2nd area of
     coverage that is different from the 1st area of coverage.
ST
     hybrid deposition mask org semiconductor device fabrication
IT
     Electroluminescent devices
     Semiconductor device fabrication
     Solar cells
     Transistors
     Vapor deposition process
         (org.; self-aligned hybrid deposition of org. materials through
        mask for fabricating org. semiconductor device)
IT
     Optical imaging devices
         (self-aligned hybrid deposition of org. materials through mask
         for fabricating org. semiconductor device)
IT
     Evaporation
         (vacuum, thermal; self-aligned hybrid deposition of org. materials
         through mask for fabricating org. semiconductor device)
IT
     2085-33-8, Alq3
     RL: DEV (Device component use); FMU (Formation, unclassified); PEP
      (Physical, engineering or chemical process); PYP (Physical process); FORM
      (Formation, nonpreparative); PROC (Process); USES (Uses)
         (self-aligned hybrid deposition of org. materials through mask
         for fabricating org. semiconductor device)
RE.CNT
               THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
(1) Burrows; US 6013538 A 2000 CAPLUS
(2) Isberg; US 5998085 A 1999 CA
```

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(4) Shieh; US 5641611 A 1997
L10 ANSWER 2 OF 11 CA COPYRIGHT 2003 ACS
AN
     138:311677 CA
ΤI
    Method of evaporating thin film used in organic
     electroluminescent display
IN
     Chung, Chia-Tin
PA
     Chi Mei Optoelectronics Corporation, Taiwan
SO
    U.S. Pat. Appl. Publ., 12 pp.
     CODEN: USXXCO
DT
    Patent
LA
    English
IC
    ICM B05D005-12
     ICS C23C016-00
NCL 427248100; 427058000
    74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other
    Reprographic Processes)
     Section cross-reference(s): 73
FAN.CNT 1
     PATENT NO.
                     KIND DATE
                                          APPLICATION NO. DATE
     -----
                     ----
                                          _____
    US 2003072876 A1
JP 2003123970 A2
                           20030417
                                          US 2002-55646 20020122
PΙ
                     A2 20030425
                                          JP 2002-65628 20020311
PRAI TW 2001-90125566 A 20011016
    In evapg. thin film used in org. electroluminescent display, a
    mask having a plurality of openings is placed below a display
     substrate, and a plane evapn. source is placed below the mask.
     The plane evapn. source has a plurality of evapg. material cells which are
     resp. aligned to the openings of the mask. The evapg. material
     cells are evapd. to deposit a plurality of thin films on predetd. regions
     of the display substrate.
    film evapg org electroluminescent display
    Electroluminescent devices
IT
        (displays; method of evapg. thin film used in org.
        electroluminescent display)
IT
     Luminescent screens
     Luminescent substances
        (electroluminescent; method of evapq. thin film used in org.
        electroluminescent display)
IT
     Evaporation
     Films
        (method of evapg. thin film used in org. electroluminescent
        display)
L10 ANSWER 3 OF 11 CA COPYRIGHT 2003 ACS
ΑN
     138:228962 CA
TI
     Evaporation masks for organic electroluminescent
     devices
    Wakabayashi, Morimitsu
IN
PA
     Jpn. Kokai Tokkyo Koho, 6 pp.
so
     CODEN: JKXXAF
DT
    Patent
     Japanese
T<sub>1</sub>A
IC
     ICM H05B033-10
     ICS C23C014-04; G09F009-00; G09F009-30; H05B033-12; H05B033-14
     73-5 (Optical, Electron, and Mass Spectroscopy and Other Related
     Properties)
FAN.CNT 1
     PATENT NO.
                     KIND DATE
                                          APPLICATION NO. DATE
                     ____
    JP 2003077654
                     A2 20030314
                                          JP 2001-265618 20010903
PRAI JP 2001-265618
                      20010903
```

(3) Lee; US 20010005528 A 2001 CA

AΒ The masks comprise a 1st and a 2nd patterned stripe coating mask attached to a substrate and to the adjacent layers including a red, a green and a blue phosphor layer. ST evapn mask org electroluminescent device IT Anodes Cathodes Electroluminescent devices Evaporation Luminescent substances Phosphors (evapn. masks for org. electroluminescent devices) 147-14-8, Copper phthalocyanine 2085-33-8, Tris(8-quinolinolato)aluminum IT 65181-78-4, TPD 123847-85-8, NPB 124729-98-2, MTDATA 50926-11-9, ITO RL: DEV (Device component use); USES (Uses) (evapn. masks for org. electroluminescent devices) L10 ANSWER 4 OF 11 CA COPYRIGHT 2003 ACS 138:212904 CA ANMethod for manufacturing electroluminescence display panel and TI evaporation mask Nishikawa, Ryuji; Yamada, Tsutomu IN PAJapan SO U.S. Pat. Appl. Publ., 10 pp. CODEN: USXXCO DТ Patent English LA ICM B05D005-12 IC ICS C23C016-00; B05D001-32 427066000; 427068000; 427248100; 427282000 NCL 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes) FAN.CNT 1 PATENT NO. KIND DATE APPLICATION NO. DATE ----______ -----US 2002-231963 US 2003044516 A1 20030306 20020830 PΙ Α 20030319 CN 2002-141467 20020830 CN 1404345 JP 2003157974 A2 A 20030530 JP 2002-252452 PRAI JP 2001-264694 20010831 An evapn. mask onto which an opening is formed for selectively allowing passage of an evapn. substance from an evapn. source onto a glass substrate to form an evapn. layer of an electroluminescence element in a predetd. pattern is placed between an evapn. source and a glass substrate and evapn. is performed. As a material for the evapn. mask, a material having a thermal expansion coeff. 160% or smaller of the thermal coeff. of glass is employed so as to minimize the thermal deformation of the evapn. mask which is closer the evapn. source and temp. of which is increased, to thereby improve the evapn. patterning precision. ST electroluminescence display panel evapn mask patterning Electroluminescent devices TΤ (displays; method for manufg. electroluminescence display panel and evapn. mask) IT Luminescent screens (electroluminescent; method for manufg. electroluminescence display panel and evapn. mask) IT Lithography Photomasks (lithographic masks) Thin film transistors (method for manufg. electroluminescence display panel and evapn. mask) Glass, uses IT RL: DEV (Device component use); USES (Uses) (method for manufg. electroluminescence display panel and

evapn. mask) 11110-39-7, Iron 64, nickel 36 39362-79-3, 42 Alloy IT 99353-88-5 RL: DEV (Device component use); PRP (Properties); USES (Uses) (method for manufg. electroluminescence display panel and evapn. mask) ANSWER 5 OF 11 CA COPYRIGHT 2003 ACS L10 AN 138:189155 CA ΤI Manufacturing electroluminescence element and evaporation mask on a plastic IN Nishikawa, Ryuji; Yamada, Tsutomu PA Japan U.S. Pat. Appl. Publ., 8 pp. SO CODEN: USXXCO Patent דת English LA IC ICM B05D005-12 ICS C23C016-00; B05D001-32 427066000; 427248100; 427068000; 427282000 NCL 38-3 (Plastics Fabrication and Uses) Section cross-reference(s): 74, 76 FAN.CNT 1 PATENT NO. KIND DATE APPLICATION NO. DATE --------------US 2003044517 A1 20030306 US 2002-232625 20020830 PΤ CN 1404344 A 20030319 CN 2002-141466 20020830 A2 20030523 A 20010831 JP 2003151768 JP 2002-252443 20020830 PRAI JP 2001-264707 An evapn. substance from the evapn. source is allowed to selectively pass through .gtoreq.1 openings formed on the evapn. mask corresponding to the pattern of an evapn. layer of an EL element, to form the evapn. layer on the plastic substrate. As the material for the evapn. mask, a material whose thermal expansion coeff. is similar to (within a range of .+-.30%) the thermal expansion coeff. of the plastic substrate, such as a polyimide, is employed. It is preferable to employ a material having a thermal endurance which is, for example, .gtorsim.50.degree. than the thermal endurance of the plastic substrate. By employing such a material for the evapn. mask, it is possible to ensure that the plastic substrate and the evapn. mask will exhibit the same degree of thermal deformation during evapn., enabling improvement in the precision of evapn. patterning. ST electroluminescence display mask fabrication IT Electroluminescent devices (displays; electroluminescence display mask on a polyimide substrate) Electronic device fabrication IT (electroluminescence display mask on a polyimide substrate) IT Luminescent screens (electroluminescent; electroluminescence display mask on a polyimide substrate) ITCoating materials (masking; electroluminescence display mask on a polyimide substrate) IT Plastics, uses Polyimides, uses RL: DEV (Device component use); USES (Uses) (substrate; electroluminescence display mask on a polyimide substrate) IT 50926-11-9, ITO RL: DEV (Device component use); USES (Uses) (electrode; electroluminescence display mask on a polyimide substrate)

```
L10 ANSWER 6 OF 11 CA COPYRIGHT 2003 ACS
AN
    136:175511 CA
ΤI
    Apparatus for evaporating a fluorescent material of a light
    emitting display device
    Ko, Yeong Uk; Ko, Ik Hwan; Sung, Un Cheol
IN
PA
    Hyundai Electronics Ind. Co., Ltd., S. Korea
    Repub. Korean Kongkae Taeho Kongbo, No pp. given
SO
    CODEN: KRXXA7
DТ
    Patent
LA
    Korean
IC
    ICM H05B033-00
    74-9 (Radiation Chemistry, Photochemistry, and Photographic and Other
CC
    Reprographic Processes)
FAN.CNT 1
                     KIND DATE
                                          APPLICATION NO. DATE
    PATENT NO.
     _____
                     ----
                                         _____
    KR 2000039653 A 20000705
PT
                                          KR 1998-55054
                                                         19981215
                           19981215
PRAI KR 1998-55054
    An app. for evapg. a fluorescent material for depositing in a light
     emitting displaying device is provided to reduce the no. of the processes
    which uses a mask by simultaneously evapg. the red, green, and
    blue fluorescent materials. Three fluorescent material supplying tubes
     are disposed at the upper portion of a transparent metal film. Red,
     green, and blue fluorescent bodies are located in the fluorescent material
     supplying tubes, resp. A plurality of nozzle holes are formed in the
     fluorescent material supplying tubes. The fluorescent material is
     injected through the nozzle holes. The fluorescent material supplying
     tubes is rotated from one side of the transparent metal film to the other
     side of the transparent metal film by a driving means.
    vapor deposition app fluorescent material LED display
ST
IT
    Electroluminescent devices
     Fluorescent substances
     Vapor deposition apparatus
        (app. for evapg. a fluorescent material of a light emitting displaying
       device)
L10
    ANSWER 7 OF 11 CA COPYRIGHT 2003 ACS
\mathbf{A}\mathbf{N}
     136:94638 CA
TI
     Making encapsulated organic electronic devices
     McCormick, Fred B.; Baude, Paul F.; Vernstrom, George D.
IN
     3M Innovative Properties Company, USA
PA
SO
     PCT Int. Appl., 33 pp.
     CODEN: PIXXD2
DT
     Patent
LA
     English
     ICM H01L051-20
IC
     ICS H01L051-40; H05B033-04
     76-3 (Electric Phenomena)
CC
     Section cross-reference(s): 38
FAN.CNT 1
                  KIND DATE
                                         APPLICATION NO. DATE
     PATENT NO.
     -----
                     ----
                           _____
                                         -----
                                     WO 2000-US31393 20001115
     WO 2002005361
                    A1 20020117
PΙ
        W: AE, AG, AL, AM, AT, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH,
            CN, CR, CU, CZ, CZ, DE, DE, DK, DK, DM, DZ, EE, EE, ES, FI, FI,
            GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR,
            KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX,
            MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SK, SL, TJ, TM,
            TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD,
            RU, TJ, TM
         RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY,
            DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF,
            BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG
                                        EP 2000-989200
                      A1 20030409
                                                         20001115
     EP 1299913
```

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR PRAI US 2000-614993 Α 20000712 WO 2000-US31393 W 20001115 The invention provides methods for making encapsulated org. electronic AB devices (OED) including org. LEDs (OLED). The present invention can provide a robust OED device by means of in situ edge sealing enhancing structural integrity and device lifetime. The edge sealing is provided by using an adhesive component applied to a substrate prior to OED element deposition. A thin layer of an adhesive (pressure sensitive adhesive, hot melt, or curable) is applied to release liner, openings are cut in the adhesive/liner composite, then the composite is adhered to an electrode-coated substrate. Alternatively, an adhesive may be applied directly onto the electrode-coated substate, e.g., by printing in a desired pattern, optionally partially cured or dried, then covered with .gtoreq.1 liners that act as a mask during deposition of the OLED elements. Another method would be to prep. a blank liner with a patterned adhesive, then die cut openings complementary to the adhesive pattern in the liner to allow deposition of OLED elements once the adhesive/liner is placed on the substrate. STencapsulated org electronic device prepn ΙT Electron beam evaporation (alumina layer; making encapsulated org. electronic devices) IT Siloxanes (nonpolymeric) RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses) (coated on metal foil as adhesive-coated liner; making encapsulated org. electronic devices) IT Polyesters, processes RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses) (coated with siloxanes or fluorocarbons as adhesive-coated liner; making encapsulated org. electronic devices) IT Adhesives (conductive, thermal, elec.; making encapsulated org. electronic devices) IT Adhesives (curable; making encapsulated org. electronic devices) IT Fluoropolymers, processes RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses) (film as adhesive-coated liner; making encapsulated org. electronic devices) IT Hydrocarbons, processes RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses) (fluoro, coated on metal foil as adhesive-coated liner; making encapsulated org. electronic devices) IT Electric contacts Electroluminescent devices Encapsulation Lamps (nonelectric) Microelectronic devices Release coatings Sealing Shadow masks (making encapsulated org. electronic devices) TТ (metal as protective layer; making encapsulated org. electronic devices) TT Multilayers (polymer as protective layer; making encapsulated org. electronic devices) IT Films

(polymeric; making encapsulated org. electronic devices) IT Adhesives (pressure-sensitive; making encapsulated org. electronic devices) IT Glass, uses RL: DEV (Device component use); USES (Uses) (thin flexible as protective layer; making encapsulated org. electronic devices) 7789-24-4, Lithium fluoride, uses IT RL: DEV (Device component use); USES (Uses) (LiF/Al cathode; making encapsulated org. electronic devices) IT 9003-07-0, Polypropylene RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses) (adhesive-coated liner; making encapsulated org. electronic devices) 126213-51-2, Poly(ethylenedioxythiophene) IT RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses) (conductive polymer in light emitting construction; making encapsulated org. electronic devices) 1314-13-2, Zinc oxide, uses 7429-90-5, Aluminum, uses TΤ 7439-93-2. 7440-19-9, Samarium, uses 7439-95-4, Magnesium, uses Lithium, uses 7440-39-3, Barium, uses 7440-57-5, Gold, uses 7440-22-4, Silver, uses 7440-65-5, Yttrium, uses 7440-70-2, Calcium, uses 50926-11-9, ITO 53740-87-7 RL: DEV (Device component use); USES (Uses) (counter electrode; making encapsulated org. electronic devices) IT 1344-28-1, Alumina, processes RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses) (electron beam evapn. on ITO; making encapsulated org. electronic devices) IT 1332-29-2, Tin oxide RL: DEV (Device component use); USES (Uses) (fluorine, counter electrode; making encapsulated org. electronic devices) IT 123847-85-8, .alpha.-NPD RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses) (hole transport layer in light emitting construction; making encapsulated org. electronic devices) 155306-71-1, C545T 147-14-8, Copper phthalocyanine IT RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses) (in light emitting construction; making encapsulated org. electronic devices) 2085-33-8, Tris(8-hydroxyquinolinato)aluminum ΙT RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses) (light emitting layer; making encapsulated org. electronic devices) THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD RE.CNT 6 (1) Idemitsu Kosan Co; EP 0884930 A 1998 CA (2) Liu Youmin; US 5786664 A 1998 CA (3) Motorola Inc; EP 0762806 A 1997 (4) Seiko Epson Corp; WO 0005929 A 2000 CA (5) Seiko Epson Corp; EP 1018857 A 2000 CA (6) Tdk Corp; EP 1021070 A 2000 L10 ANSWER 8 OF 11 CA COPYRIGHT 2003 ACS 135:295947 CA AN Manufacture of organic electroluminescence display TI IN Yamada, Tsutomu PA Sanyo Electric Co., Ltd., Japan Jpn. Kokai Tokkyo Koho, 7 pp. SO

CODEN: JKXXAF Patent DTLA Japanese IC ICM H05B033-10 ICS C23C014-24; G09F009-00; H05B033-14 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties) FAN.CNT 1 PATENT NO. KIND DATE APPLICATION NO. DATE --------------JP 2001284046 A2 20011012 JP 2000-96094 PΙ 20000331 US 2001055844 A1 20011227 PRAI JP 2000-96094 A 20000331 US 2001-820139 20010328 The display comprises: (1) a glass substrate; (2) a pair of electrodes interposing an org. electroluminescent laminate; and (3) a switching and (4) a current-supplying TFT, where h > nd (d and h = openingwidth and thickness of phosphor vaporization mask, resp.; n = 1-2.5). org electroluminescence display vaporization mask STIT Thin film transistors (TFT; manuf. of org. electroluminescence display) IT Anodes Cathodes Electric switching Evaporation